

REMARKS

The Official Action mailed May 4, 2001, has been received and its contents carefully noted. Claims 1,3, and 5 have been amended and new claims 7-9 have been added to recite additional protection to which Applicant is entitled. Claims 1-9 are now pending in the present application, of which claims 1, 3, 5, and 7 are independent.

Claims 1-6 are Patentable Over Yamanaka

In paragraph 2 of the Office Action, the Examiner has indicated that claims 1 and 2 are rejected under 35 U.S.C. § 102(e) as being anticipated by Yamanaka, U.S. Patent No. 5,751,383 (Yamanaka). The Examiner did not expressly reject claims 3-6; however, subsequent paragraphs appear to address these claims.

The present invention relates to an electronic device. The electronic device has a liquid crystal panel. Further, the electronic device has a light emitting diode as a light source of the liquid crystal panel.

The Examiner is reminded that in order to form a proper anticipation rejection under 35 U.S.C. § 102, the reference must disclose each and every element of the claimed invention. *See* M.P.E.P. § 2131; *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987); *Scripps Clinic & Res. Found. V. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991); *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997); *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047 (Fed. Cir. 1995). Specifically, two conditions must be met as follows: (1) all the elements of the claim must be properly construed, and (2) all the elements of the claim, as properly construed, must be disclosed in the prior art reference either explicitly or inherently. *Elmer v. ICC Fabricating, Inc.*, 67 F.3d 1571, 1574 (Fed. Cir. 1995); *Schreiber*, 128 F.3d at 1477; *Glaxo*, 52 F.3d at 1047.

Yamanaka does not teach or disclose means for mixing rays from 3-color light emitting diodes to produce white light by scattering or mixing rays from 3-color light emitting diodes therethrough before introducing the white light into a liquid crystal panel. Also, it would not

have been obvious to one with ordinary skill in the art at the time of the invention to modify Yamanaka to form such a structure.

The reference to Yamanaka teaches red, green and blue light emitting diodes 440, 441, 442 in Fig. 46 as a light source of a light valve. Also, the reference to Yamanaka uses a mixing unit 205 which scatters the light of the three color pixel triplet, as described in col. 18, lines 29-31. Further, the reference to Yamanaka teaches a light scattering plate 1203 in Fig. 50. The reference to Yamanaka has an arrangement that a light valve is provided next to a light source, and the light scattering plate 1203 (or the mixing unit 205) is provided next to the light valve. Therefore in Yamanaka, the light scattering plate 1203 (or the mixing unit 205) is not used to produce white light from three primary color lights of a light source therethrough before introducing the white light into a light valve.

The Examiner has misconstrued Yamanaka. At paragraph 3 of Paper No. 6, the Examiner claims that "the mixing unit 205 scatters the light of the three color pixel triplet (col. 18, lines 29-30) for producing white light (col. 7, lines 10-12)." In fact, Yamanaka discloses the exact opposite of the Examiner's assertion. At col. 7, lines 10-14, Yamanaka teaches "a device for taking rays of white light from a fine surface light source ... and ... converting them to divergence controlled rays."

Contrary to Yamanaka, the present invention uses a scatterplate (or means for mixing rays) from 3-color light emitting diodes to produce white light by scattering (or mixing) rays from 3-color light emitting diodes therethrough before introducing the white light into a liquid crystal panel.

Since Yamanaka does not teach or disclose all the elements of the claim, as properly construed, either explicitly or inherently, the rejection under 35 U.S.C. § 102 should be withdrawn, and claims 1-6 should be held allowable.


New Claims 7-9 Should be Held Allowable

New independent claim 7 is similar to claim 1 and further claims an active matrix substrate, a counter substrate, and describes the direction of the light with respect to the

substrates. New dependent claims 8 and 9 depend from claim 7. For the reasons stated above, claims 7-9 should also be held allowable.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 1, 3, and 5 as follows:

1. (Amended) An electronic device [incorporating a liquid crystal display which has an illuminating light source for a liquid crystal panel of the liquid crystal display; the illuminating light source] comprising:

a liquid crystal panel:

a light source comprising 3-color light emitting diodes for producing three primary colors for additive color mixing; and
means for mixing rays from the 3-color light emitting diodes to produce white light,

wherein said white light is introduced into said liquid crystal panel.

3. (Amended) An electronic device [incorporating a liquid crystal display which has an illuminating device for a liquid crystal panel of the liquid crystal display; the illuminating device] comprising:

a liquid crystal panel:

a light source comprising 3-color light emitting diodes for producing three primary colors for additive color mixing; and
a scatterplate for scattering rays from the 3-color light emitting diodes to produce white light,

wherein said white light is introduced into said liquid crystal panel.

5. (Amended) An electronic device [incorporating a liquid crystal display] comprising:

a liquid crystal panel:

a light source comprising 3-color light emitting diodes for producing three primary colors for additive color mixing [in order to illuminate a liquid crystal panel of the liquid crystal display]; and

[control means for controlling the turn-on of the 3-color light emitting diodes]

a scatterplate for scattering rays from the 3-color light-emitting diodes to produce white light.

wherein said white light is introduced into said liquid crystal panel from a back of said liquid crystal panel.

Please add new claims 7-9 as follows:

- 7. An electronic device comprising:
a liquid crystal panel comprising an active matrix substrate and a counter substrate;
a light source comprising 3-color light emitting diodes for producing three primary colors for additive color mixing; and
means for mixing rays from the 3-color light emitting diodes to produce white light,
wherein said white light is introduced into said liquid crystal panel from a side of said counter substrate of said liquid crystal panel.
8. A device according to claim 7 wherein said counter substrate has a plurality of inclined surfaces on a back of said counter substrate.
9. A device according to claim 7 wherein the electronic device is a video camera, a digital camera, a head mounted display, a car navigation equipment, a personal computer, a mobile computer, a cellular phone or an electronic book.--